

This listing of claims will replace all prior versions and listings of claims in the application.

**Listing of Claims**

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Previously amended) A measurement system comprising:  
a first log amp;  
a second log amp; and  
a differencing circuit coupled to the first and second log amps, wherein the differencing circuit consists essentially of a summing node.
5. (Cancelled)
6. (Previously amended) A measurement system comprising:  
a first log amp;  
a second log amp;  
a differencing circuit coupled to the first and second log amps; and  
a phase detector core coupled to the first and second log amps.
7. (Original) A measurement system according to claim 6 wherein:  
the first log amp has a first limiting output coupled to a first input of the phase detector core; and  
the second log amp has a second limiting output coupled to a second input of the phase detector core.
8. (Original) A measurement system according to claim 7 wherein the detector core comprises a multiplier.

9. (Original) A measurement system according to claim 6 further comprising an output interface circuit coupled to the phase detector core.

10. (Cancelled)

11. (Previously amended) A measurement system comprising:

a first log amp; and

a second log amp;

wherein the first and second log amps are co-integrated on a substrate; and

wherein the first and second log amps are arranged symmetrically about a center line.

12. (Cancelled)

13. (Previously amended) A measurement system comprising:

a first log amp;

a second log amp;

a first parasitic network coupled to the first log amp; and

a second parasitic network coupled to the second log amp;

wherein the first and second log amps are co-integrated on a substrate;

wherein the substrate is mounted in a package; and

wherein the first and second parasitic networks have similar frequency responses.

14. (Previously amended) A measurement system comprising:

a first log amp;

a second log amp;

a differencing circuit having first and second inputs coupled to the first and second log amps, respectively; and

a third log amp coupled to a third input of the differencing circuit.

15. (Previously amended) A measurement system comprising:

a first log amp;

a second log amp;

a differencing circuit having first and second inputs coupled to the first and second log amps, respectively; and

one or more additional log amps coupled to one or more additional inputs of the differencing circuit.

16. (Original) A measurement system comprising:  
a first log amp having a first limiting output;  
a second log amp having a second limiting output; and  
a phase detector core coupled to the first and second log amps to receive the first and second limiting outputs.

17. (Original) A measurement system according to claim 16 wherein the phase detector core comprises a multiplier.

18. (Original) A measurement system according to claim 16 wherein the first and second log amps are co-integrated on a substrate.

19. (Cancelled)

20. (Cancelled)

21. (Previously amended) An integrated circuit comprising:  
two or more log amps  
a differencing circuit coupled to the two or more log amps; and  
a phase detector core coupled to the two or more log amps.

22. (Cancelled)

23. (Cancelled)

24. (Previously amended) A method comprising:  
logarithmically amplifying a first input signal, thereby generating a first output signal;  
logarithmically amplifying a second input signal, thereby generating a second output signal; and  
differentially processing the first and second output signals  
wherein:

the first and second output signals are limiting output signals; and  
differentially processing the first and second output signals comprises  
multiplying the first and second output signals.

25. (Previously amended) A method comprising:  
logarithmically amplifying a first input signal, thereby generating a first output signal;  
logarithmically amplifying a second input signal, thereby generating a second output  
signal;  
differentially processing the first and second output signals;  
utilizing a signal to be examined as the first input signal; and  
utilizing a reference signal as the second input signal.

26. (Original) A method according to claim 25 wherein the reference signal has  
the same waveform as the signal to be examined.

27. (Previously amended) A method comprising:  
logarithmically amplifying a first input signal, thereby generating a first output signal;  
logarithmically amplifying a second input signal, thereby generating a second output  
signal;  
differentially processing the first and second output signals;  
utilizing a modulated signal for the first input signal; and  
utilizing a modulation signal for the second input signal.

28. (Currently amended) A measurement system ~~according to claim 2 further~~  
~~comprising~~ comprising:  
a first log amp;  
a second log amp;  
a differencing circuit coupled to the first and second log amps, wherein the  
differencing circuit is arranged to continuously process outputs from the first and second log  
amps; and  
a power amplifier having an input coupled to an input of the first log amp and an  
output coupled to an input of the second log amp;  
wherein the first and second log amps are progressive compression log amps.

29. (Previously amended) A measurement system according to claim 4 wherein the log amps have current-mode outputs.